

**REMARKS**

Claims 1 through 22 are pending in this Application, of which claims 13 through 20 stand withdrawn from consideration, pursuant to the provisions of 37 CFR §1.142(b). Claim 1 has been amended consistent with the Examiner's courteous suggestions to address formalistic issues. New claims 22 and 23 have been added. Care has been exercised to avoid the introduction of new matter. Indeed, adequate descriptive support for the present Amendment should be apparent throughout the originally filed disclosure as, for example, page 7 of the written description, lines 11 through 15. Applicants submit that the present Amendment does not generate any new matter issue.

**Claims 1 through 5 and 21 were rejected under the second paragraph of 35 U.S.C. §112.**

In the statement of the rejection, the Examiner identified perceived antecedent basis issues. This rejection is traversed.

Initially, merely identifying a perceived antecedent basis issue does not automatically trigger the legal conclusion of indefiniteness under the second paragraph of 35 U.S.C. §112. *Bose Corp. v. JBL Inc.* 274 F3d 1354, 61 USPQ2d 1216 (Fed. Cir. 2001); see also MPEP §§2173.05(e) (6th Ed. Rev. 1, Sept. 1995) and *Ex parte Porter* 25 USPQ2d 1144 (BPAI 1992).

At any rate, in order to expedite prosecution, the formalistic issues raised by the Examiner have been addressed in a manner consistent with the Examiner's suggestions, thereby overcoming the stated bases for the rejection.

Applicants, therefore, submit that the imposed rejection of claims 1 through 5 and 21 under the second paragraph of 35 U.S.C. §112 is not legally viable and, hence, solicit withdrawal thereof.

**Claims 1, 5 and 21 were rejected under 35 U.S.C. §102 for lack of novelty as evidenced by Inohara et al.**

In the statement of the rejection, the Examiner referred to Figs. 14 through 16 of Inohara et al., asserting the disclosure of a method comprising, *inter alia*, the manipulative steps of forming a single first dielectric layer, which the Examiner identified as element 730, over a substrate, forming a first barrier layer, which the Examiner identified as layer 740, comprising a first dielectric barrier material which the Examiner asserted is an oxide, on the single first dielectric layer 730 with an interface therebetween, forming a second barrier layer 765, comprising a second dielectric barrier material (silicon nitride) different from the first dielectric barrier material, on an upper surface of the first barrier layer material 740, and then etching with selectivity to the first barrier layer 740 stopping on the upper surface of the first barrier layer 740. This rejection is traversed as clearly factually erroneous.

The factual determination of lack of novelty under 35 U.S.C. §102 requires the identical disclosure in a single reference of each element of a claimed invention, such that the identically claimed invention is placed into the recognized possession of one having ordinary skill in the art. *Dayco Prods., Inc. v. Total Containment, Inc.*, 329 F.3d 1358 (Fed. Cir. 2003); *Crown Operations International Ltd. v. Solutia Inc.*, 289 F.3d 1367, 62 USPQ2d 1917 (Fed. Cir. 2002). Moreover, in imposing a rejection under 35 U.S.C. §102, the Examiner must **specifically identify** wherein each feature of the claimed invention is asserted to be disclosed in a prior art reference. *In re Rijckaert*, 9 F.3d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993); *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984). That burden has not been discharged. Indeed, there are significant differences between the claimed method and the

methodology of Inohara et al. that scotch the factual determination that Inohara et al. disclose a method identically corresponding to that claimed.

Specifically, the Examiner committed clear factual error in asserting that Inohara et al. disclose a method comprising:

Forming a first barrier layer (740), comprising a first dielectric barrier material (oxide) on the single first dielectric layer (730) with an interface therebetween; (page 3 of the September 15, 2003 Office Action, 5th and 6th lines from the bottom).

### **Factual Errors**

I. The Examiner is **wrong because** layer 730 is **not**, repeat **not**, a **barrier** layer. At least it is not a barrier layer according Inohara et al., the reference relied upon by the Examiner. According to Inohara et al., layer 740 is an **interlayer insulating film** similar to layer 730. See, for example, columns 14 of Inohara et al., lines 26 through 28 and column 15, line 3.

II. Furthermore, what the Examiner erroneously called the first barrier layer (740) does **not**, repeat **not**, form an **interface** with the first dielectric layer 730, **because** the barrier layer employed by Inohara et al., layer 735, **separates** layer 740 and layer 730.

III. Indeed, if layer 735 was intended to be interpreted as the first barrier layer, then the second barrier layer 765 identified by the Examiner is **not** of a material **different** from the first barrier metal layer, but is the **same** material, silicon nitride, as observed by the Examiner in the paragraph bridging pages 3 and 4 of the September 15, 2003 Office Action.

IV. The Examiner also committed clear factual error in stating that layer 740 is selectively etched with respect to layer 765. Saying so cannot make it so, particularly since **Inohara et al. say otherwise**. In this respect, Applicants would refer to column 15 of Inohara et al., lines 2 through 5 wherein it is stated that the upper surface of layer 740 and layer 765 “are also **simultaneously** removed” (Emphasis supplied). **Simultaneous** removal does **not** mean etching **selectivity**.

### Summary

The above argued differences in manipulative steps between the claimed method and the methodology of Inohara et al. undermine the factual determination that Inohara et al. disclose a method identically corresponding to that claimed. *Minnesota Mining & Manufacturing Co. v. Johnson & Johnson Orthopaedics Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992); *Kloster Speedsteel AB v. Crucible Inc.*, 793 F.2d 1565, 230 USPQ 81 (Fed. Cir. 1986). Applicants, therefore, submit that the imposed rejection of claims 1, 5 and 21 under 35 U.S.C. §102 for lack of novelty as evidenced by Inohara et al. is not factually viable and, hence, solicit withdrawal thereof.

**Claims 2 through 4 were rejected under 35 U.S.C. §103 for obviousness predicated upon Inohara et al. in view of Chooi et al. and Chung et al.**

In the statement of the rejection, the Examiner **admitted** that Inohara et al. do **not** disclose forming first and second dielectric barrier materials from silicon nitride, silicon oxynitride and silicon carbide by CVD at a thickness of 50Å to 500Å. The Examiner then concluded that one having ordinary skill in the art would have been motivated to form the first barrier layer in the methodology in Inohara et al. from silicon nitride and the second barrier layer of silicon carbide,

**apparently just because** Chooi et al. disclose two barrier layers, one of silicon nitride and one of silicon carbide. This rejection is traversed.

Initially, claims 2 through 4 depend upon independent claim 1. Applicants incorporate herein the arguments previously advanced in traversing the imposed rejection of claim 1 under 35 U.S.C. §102 for lack of novelty as evidenced by Inohara et al. The additional references to Chooi et al. and Chung et al. do not cure the argued deficiencies of Inohara et al.

Further, Applicants separately argue the patentability of claims 2 through 4. Specifically, the Examiner has failed to establish the requisite motivational element.

### **There is no Motivation**

In order to establish the requisite motivation, the Examiner must point to a **source** in the applied prior art for **each** claim limitation and a **source** in the applied prior art for the requisite **motivational** element. *Smiths Industries Medical System v. Vital Signs Inc.*, 183 F.3d 1347, 51 USPQ2d 1415 (Fed. Cir. 1999). Indeed, the Examiner is required to make a "thorough and searching" factual inquiry and, based upon that factual inquiry and, based upon that factual inquiry, explain **why** one having ordinary skill in the art would be realistically impelled to modify particular prior art, in this case the **particular** method disclosed by Inohara et al., to arrive at the claimed invention. *In re Lee*, 237 F.3d 1338, 61 USPQ2d 1430, 1433 (Fed. Cir. 2002). Such a factual inquiry requires **clear and particular factual findings** as to a **specific understanding** or **specific technological principle** which would have realistically impelled one having ordinary skill in the art to modify the particular method disclosed by Inohara et al. to arrive at the claimed invention. *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 57 USPQ2d 1161 (Fed. Cir. 2000); *Ecolochem Inc. v. Southern California Edison, Co.* 227 F.3d 1361, 56 USPQ2d 1065 (Fed. Cir. 2000); *In re*

*Kotzab*, 217 F.3d 1365, 55 USPQ 1313 (Fed. Cir. 2000); *In re Dembiczak*, 175 F.3d 994, 50 USPQ2d 1614 (Fed. Cir. 1999). Merely identifying wherein features of a claimed invention are perceived to reside in disparate references does not establish the requisite motivation. *In re Kotzab*, *supra*; *Grain Processing Corp. v. American-Maize Products Co.*, 840 F.2d 902, 5 USPQ2d 1788 (Fed. Cir. 1988). Rather, a **specific reason** must be offered based upon **facts** to support the asserted motivation--not generalizations. *Ecolochem Inc. v. Southern California Edison, Co. supra*; *In re Rouffet*, 149 F.3d 1350, 47 USPQ2d 1453 (Fed. Cir. 1998).

In applying the above legal tenets to the exigencies of this case, Applicants submit that the requisite motivation element has **not** been established. Specifically what the Examiner has identified as the first barrier layer 740 is an interlayer dielectric layer, at least according to Inohara et al. There is no factual basis upon which to predicate the conclusion that one having ordinary skill in the semiconductor fabrication art would have been realistically lead to form an interlayer dielectric of silicon nitride as opposed to silicon oxide. *In re Lee, supra*.

Based upon the foregoing, Applicants submit that a *prima facie* basis to deny patentability to the claimed invention has not been established. Applicants, therefore, submit that the imposed rejection of claims 2 through 4 under 35 U.S.C. §103 for obviousness predicated upon Inohara et al. in view of Chooi et al. and Chung et al. is not factually or legally viable and, hence, solicit withdrawal thereof.

### **New Claims 22 and 23**

New claims 22 and 23 are free of the applied prior art by virtue of their dependence upon independent claim 1, the patentability of which has been argued *supra*. Moreover, Applicants

separately argue the patentability of claims 22 and 23 based upon the limitations expressed therein. It is not apparent wherein that the applied prior art discloses or suggests forming the side wall spacers leaving a gap between the upper surface of the side wall spacer and the upper surface of the first dielectric barrier layer, as in claim 22, let alone a gap having the dimensions specified in claim 23.

Applicants acknowledge, with appreciation, the Examiner's allowance of claims 6 through 12. Based upon the foregoing, it should be apparent that the imposed rejections have been overcome and that all pending claims are in condition for immediate allowance. Favorable consideration is, therefore, respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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